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Southern Forestry Notes

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Southern Forest Experiment Station, New Orleans, La.

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SOUTHERN PULPING CAPACITY EXPANDS DESPITE PRODUCTION DROP

In 1957 daily pulping capacity of southern mills increased from 38,000 tons to 41,000 even though the total pulpwood harvest fell off about 3% from that of the previous year.

The recent business recession slowed the rate of southern pulpwood production, which had risen each year from 1950 through 1956. Construction of new mills, however, and expansion of existing mills, indicate that the upward trend will shortly resume.

A total of 19,783,000 cords of roundwood and plant residues were produced by the 12 southern States. Three States harvested over 2 million cords apiece. Output by State ranged from 3,859,000 cords in Georgia to 60,000 in Oklahoma.

The cut of hardwood was the greatest on record--2,866,000 cords of roundwood, a gain of almost 4% over 1956. Round pine pulpwood dropped to 15,714,000 cords, about 7% less than in 1956.

The use of plant residues for pulp rose to 1,203,000 cords, a gain of 83% over 1956. The recent installation of additional chippers at sawmills and veneer mills assures that this production will continue to rise. --Joe F. Christopher.

TRACE MINERALS AMPLE ON WOODS RANGE

Recent tests show that important native forage plants on longleaf pine-bluestem range of Louisiana contain ample quantities of minor mineral elements. Cattlemen therefore will not improve the productivity of their range herds by using supplements of these so-called trace minerals.

Samples of 4 abundant forage plants--pinehill bluestem, slender bluestem, narrowleaf panicum, and swamp sunflower--were collected at the early, full, and mature green stages of leaf development. They were analyzed by the Feeds and Fertilizer Laboratory of the Louisiana Agricultural Experiment Station. Cobalt, iron, copper, manganese, zinc, molybdenum, magnesium, and sulphur easily sufficed for all cattle needs at all growth stages. Several of these minerals were present in comparatively large quantities. Because excessive amounts may be harmful to cattle, indiscriminate use of mineral supplements should be avoided.

In addition to showing that minor minerals are adequate in native forage, these tests again demonstrated the need for supplements of crude protein and phosphorus. Calcium and potassium, however, were in good supply. Details will be found in Bulletin 516 of the Louisiana Agricultural Experiment Station, "Minor Mineral Elements and Other Nutrients on Forest Range in Central Louisiana."--Don A. Duncan.

GIANT-TREE VOLUMES FOR MACHINE USE

The increasing popularity of punched-card inventory techniques and electronic data processing has emphasized the need for convenient formulae that will allow breakdown of tree volume into parts. For manually computing volumes of graded portions of tree stems, Occasional Paper 134 described a giant-tree technique based on Girard form class, d.b.h., and cumulative lengths of

various graded portions of a tree. The technique assumed an average taper of 2 inches per 16 feet running down from an imaginary conical tip through d.i.b. at 17.3 feet above ground and thence on down to the stump 1 foot above ground.

For electronic data processing, the volume or surface of this imaginary giant cone can be expressed as a function of cone height (H), which is calculated as: H(in feet) = (d.b.h. in inches) (form class as decimal fraction) (8) + 16. Then (H) is successively shortened by each cumulative length of graded material above the stump, and a new volume to tree tip is computed for each shortened length. Subtraction of these various giant-tree volumes will give the same volumes for individual portions of the stem as were obtained tabularly in Occasional Paper 134. Basic giant-tree formulae well adapted to electronic data processing are given below:

Square feet (surface)	$= .016363H^2$
Cubic feet (volume)	$= .000028407H^3$
Board feet	
Formula Scribner	$= .0002573H^3 - .01394H^2 - .112H$
Int. ¼-inch	$= .00025918H^3 - .011592H^2 + .042H$
Doyle	$= .00032552H^3 - .039058H^2 + 1.542H$

As an example, a tree might have d.b.h. = 15.0 inches and form class = 70. Then its initial (H) = (15.0) (.70) (8) + 16 = 100. The cubic-foot volume of the first 10-foot butt section would be calculated as .000028407 $[H^3 - (H-10)^3]$ or .000028407 (1,000,000 - 729,000) = 7.70 cubic feet. A machine can handle this and the multiple term board-foot expressions in a fraction of a second.--
L. R. Grosenbaugh.

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*Copies are available at the Southern Station.